



COPY OF PAPERS  
ORIGINALLY FILED

MH-5091

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Ma, et al.

Serial No.:

10/057,179

Group No.: 2681

Filed:

January 25, 2002 (Incorrect)

Examiner: Unknown

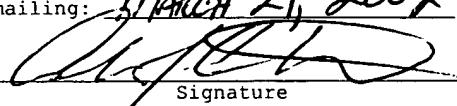
For:

Expectation-Maximization-Based Channel Estimation and Signal  
Detection for Wireless Communications Systems

I hereby certify that this correspondence is being deposited with the United States Postal Service as FIRST CLASS MAIL in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on:

Date of mailing:

MARCH 21, 2002

  
Signature

Petition to Correct Filing Date and Date-In Discrepancy Pursuant to 37 CFR 1.10(c)

Assistant Commissioner for Patents  
Office of Initial Patent Examination's Customer Service Center  
Washington, D.C. 20231

Dear Sir:

Please enter this Petition to Correct Filing Date and Date-In Discrepancy Pursuant to 37 CFR 1.10(c) before examining the application. The correct filing date is January 24, 2002.

**Remarks**

Applicants hereby petition the Examiner to correct the filing date and date-in discrepancy pursuant to 37 CFR 1.10(c) before examining the application.

Applicants further state that the correct filing date for application serial number 10/057,179 is January 24, 2002.

As evidence, please see the attached a copy of the Express Mail, Post Office to Addressee receipt numbered EV 004299877 US and dated January 24, 2002.

Applicants direct the Examiner's attention to the handwriting on the enclosed Express Mail receipt. Specifically, the applicants ask the Examiner to compare the third digit entered by hand in the "Date In" box in the upper, left-hand corner of the Express Mail receipt, to the last digit entered by hand in the "Total Postage & Fees" box in the center of the Express Mail receipt. Upon comparing the two, it can be seen that the digit entered in the "Date In" box is a four (4) with a closed top, or nearly so, written with a single pen stroke. However, the digit in the "Total Postage & Fees" box is clearly a five (5), written with two separate pen strokes, the upper, horizontal line of the five (5) being distinct and separate from the rest of the digit.

The Express Mail receipt tracking number matches those on the application transmittal letter and cover letter for the application number 10/057,179, copies of which are also enclosed.

As further evidence, applicants enclose a copy showing both sides of a return postcard filed with the application. It is the practice of the applicants' representative to apply postage to the return postcard just prior to sealing the Express mail package and depositing it in a United States Postal Service Express Mail Box located at 1 Kendall Square, Cambridge, MA. The date the postage was applied to the return postcard is January 24, 2002.

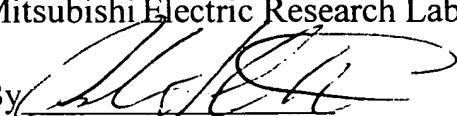
Further still, Applicant's enclose a copy of the log kept by applicants' representative, indicating a mailing date of January 24, 2002 for Express Mail package No. EV 004299877 US and further identified as attorney docket number MH-5091, which is the attorney docket number for application number 10/057,179.

Applicants state that this petition falls under 37 CFR 1.10(c) rather than 37 CFR 1.10(d) because the date on the Express Mail receipt was not entered incorrectly. Rather, it is very confusing and difficult to decipher.

Kindly correct the filing receipt to reflect the filing date of January 24, 2002.

Respectfully submitted,

Mitsubishi Electric Research Laboratories, Inc.

By 

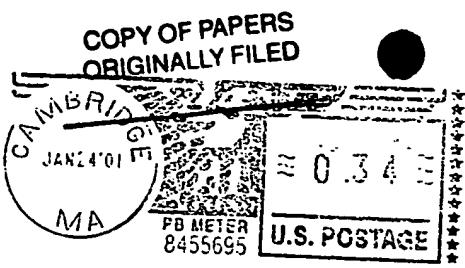
Andrew J. Curtin

Reg. No. 48,485

Attorney for Assignee

201 Broadway, 8<sup>th</sup> Floor  
Cambridge, Massachusetts 02139  
(617) 621-7573

RECEIVED  
FEB 14 2002



MITSUBISHI ELECTRIC-ITA  
201 BROADWAY  
CAMBRIDGE, MA 02139

ATTN: A. Currin

24



**COPY OF PAPERS  
ORIGINALLY FILED**



# Expectation-Maximization-Based Channel Estimation Title: AND Signature Detection for Wireless Communication Systems

Applicant: MA et al Filed: Heckwith

Application No. 544-5041 Patent No. 5,442,631 Docket No. WU-5041

Enclosed is the following:  Notice to File Missing Parts;

Transmittal Letter in triplicate:  Petition for Extension of Time for

Transliteration Letter in duplicate, 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1090 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 11110 11111 11112 11113 11114 11115 11116 11117 11118 11119 11110 11111 11112 11113 11114 <

Application including Figs. 1-61 of Spec.,        months.

65-30 of claims and pg. 31 of Abstract;  Issue Fee, PTO Form 85B&C,

Declaration and Power of Attorney;  \_\_\_\_\_ Year Maintenance Fee

Other: \_\_\_\_\_

7 Sheets of Figs. 1-7;

Letter to Chief Draftsman:

Letter to State Department;

Amendment,  Addendum,  Statement, Form 1412

Information Disclosure Statement, Form 1449;

\_\_\_\_ refs; Receipt Date & Application No. \_\_\_\_\_

Assignment, Recordation Cover Sheet; J1050 U.S. F 10 1857179

Date Mailed: 1-24-02

Date Due: \_\_\_\_\_

Initials: RLC Date: 01/25/02

Business Mail Receipt No FBI 204799872 US

**Receipt Date & Application No.**

J1050 U.S. PTO  
10/057179



01/25/02



COPY OF PAPERS  
ORIGINALLY FILED

MH-5091

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

"EXPRESS MAIL" mailing label number: EV 004299877 US

Date of Deposit: 1-24-02

I hereby certify that this paper or fee is being deposited with the United States Postal Service "EXPRESS MAIL Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Andrew J. Svirin  
Printed name of depositor

Signature of depositor

\* \* \*

TRANSMITTAL LETTER

The Assistant Commissioner for Patents  
Washington, D.C. 20231

ATTN: BOX PATENT APPLICATION

Sir:

Transmitted herewith for filing is the patent application of: Xiaoqiang Ma, Hisashi Kobayashi, Stuart C. Schwartz

FOR: Expectation-Maximization-Based Channel Estimation and Signal Detection for Wireless Communications Systems

Enclosed are:

- [31] pages of specification, claims and abstract
- [7] sheet of formal drawings
- [x] Declaration and Power of Attorney
- [X] Assignment of the application
- [ ] Information Disclosure Statement

The filing fee is calculated as follows:

COPY OF PAPERS  
ORIGINALLY FILED

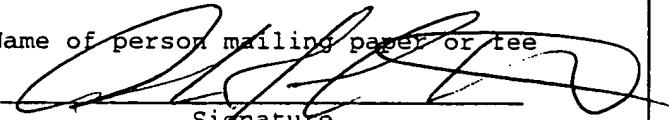


EXPRESS MAIL number: EV 004299877 US

Date of Deposit: 1-24-02

I hereby certify that this paper is being deposited with the United States Postal Service "EXPRESS MAIL Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, DC 20231.

Name of person mailing paper or fee

  
Signature  
Andrew J. Curtin

=====

APPLICATION FOR UNITED STATES LETTERS PATENT

=====

Title: **Expectation-Maximization-Based Channel Estimation and Signal Detection for Wireless Communications Systems**

Inventors:      Xiaoqiang Ma  
                  Hisashi Kobayashi  
                  Stuart C. Schwartz  
                  Daqing Gu  
                  Jinyun Zhang

115

PROJECT NAME

NOTEBOOK NO.

DATE	DOCKET #	DESCRIPTION	TO	VIA
12/28/01	VG0135	ISSUE FILE	PTO	MAIL
1/1/02			AL	MAIL
1/14/02	MH-5093	APPLICATION	PTO MH-5093 EV004299625US	EXPRESS MAIL
1/19/02	VG0-111,133,139	DRAWINGS	AL	MAIL
1/15/02	MH-5090	APPLICATION	PTO MH-5093 EV004299639US	EXPRESS MAIL
1/15/02	MERL-1287	INVENTOR ADDRESS	SGOA	AIR MAIL
1/18/02	MERL-1277	EPO RESPONSE	SGOA	AIR MAIL
1/18/02	ATL-024	FINAL R&T. RESPONSE	PTO	MAIL
1/21/02	CR-1359	APPLICATION	USPTO EV004299885US	EXPRESS MAIL
1/21/02	MH-5086	APPLICATION	USPTO EV004299642US	EXPRESS MAIL
1/23/02	CR-1301, 1314, 1322, 1326 1329, 1331, 1333, 1335, 1336 1337, 1338, MERL 1250	FOREIGN FILLED	MELCO 400-27214235	FED EX
1/23/02	VG0-122, 123, 129, 138	OFFICE ACTIONS	AL 346 7440925	FED EX
1/24/02	CR-1317, 1320	FOREIGN FILM	MELCO 400-27219323	FED EX
1/31/02	MH-5094	APPLICATION	PTO EV004299827US	EXPRESS MAIL
1/31/02	CR-1300	CERT COPY REQUEST	PTO	MAIL
1/31/02	MH-5062	CERT COPY REQUEST	PTO	MAIL
1/31/02	MH-5063	CERT COPY REQUEST	PTO	MAIL
	SIGNATURE READ AND UNDERSTOOD		DATE DATE	19 19

COPY OF PAPERS  
ORIGINALLY FILED

## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
10/057,179	01/25/2002	2681	740	MH-5091	7	20	2

*01/24/2002*

Patent Department  
Mitsubishi Electric Research Laboratories, Inc.  
201 Broadway  
Cambridge, MA 02139



CONFIRMATION NO. 5294

## FILING RECEIPT



OC00000007516221

Date Mailed: 02/22/2002

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Xiaoqiang Ma, Princeton, NJ;  
Hisashi Kobayashi, Princeton, NJ;  
Stuart C. Schwartz, Princeton, NJ;  
Daqing Gu, Morris Plains, NJ;  
Jinyun Zhang, New Providence, NJ;

## Domestic Priority data as claimed by applicant

## Foreign Applications

If Required, Foreign Filing License Granted 02/21/2002

Projected Publication Date: To Be Determined - pending completion of Corrected Papers

Non-Publication Request: No

Early Publication Request: No

## Title

Expectation-maximization-based channel estimation and signal detection for wireless communications systems

## Preliminary Class

---

**LICENSE FOR FOREIGN FILING UNDER  
Title 35, United States Code, Section 184  
Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



**Mitsubishi Electric Information Technology Center America - ITA**  
Mitsubishi Electric Research Laboratory - MERL  
201 Broadway, Cambridge, MA 02139

Asst. Commissioner for Patents  
Box Missing Parts  
Washington, D.C. 20231



[Home](#) | [Sign In](#) | [Find ZIP Codes](#) | [Calculate Postage](#) | [Change Address](#) | [Locate Post Offices](#) | [Track/Confirm](#)[Shipping center](#)[Ship](#)[Rates](#)[Supplies](#)[Web Tools](#)[Track & Confirm](#)[Delivery Confirmation](#)[Signature Confirmation](#)[Keyword/Search](#)

## ► Shipping center *Track & Confirm*



### Shipment History

You entered EV00 4299 877U S

Your item was delivered at 7:50 am on January 28, 2002 in WASHINGTON, DC 20231 to PATENTS 20231. The item was signed for by M BOSTON.

Here is what happened earlier:

- NOTICE LEFT, January 26, 2002, 11:48 am, WASHINGTON, DC 20231
- ACCEPTANCE, January 25, 2002, 6:16 pm, BOSTON, MA 02206

### Track & Confirm

Enter number from shipping receipt  
the field below:

[Request Delivery Record >](#)

**POSTAL INSPECTORS**  
Preserving the Trust

[site map](#) | [contact us](#) | [FAQs](#) | [search](#) | [keywords](#)

Copyright © 1999-2001 USPS. All Rights Reserved. [Terms of Use](#) [Privacy Policy](#)

OPY OF PAPERS  
ORIGINALLY FILED



**POST OFFICE  
TO ADDRESSEE**



UNITED STATES POSTAL SERVICE®



**SEE REVERSE SIDE FOR  
SERVICE GUARANTEE AND LIMITS  
ON INSURANCE COVERAGE**

Customer Copy  
Label 11-F August 2000

ORIGIN (POSTAL USE ONLY)		Day of Delivery	First Rate Envelope
PO ZIP Code 02206		<input checked="" type="checkbox"/> Next <input type="checkbox"/> Second	<input type="checkbox"/>
Date In	12502	12 Noon	3 PM
Time In	6:00 PM	<input type="checkbox"/> 2nd Day	<input type="checkbox"/> 3rd Day
NO CDS	11 lbs.	Intl Alpha Country Code	CDG Fee
WEIGHT	11 lbs.	Insurance Fee	
NO METRO	Acceptance Clerk initials	Total Postage & Fees	\$ 16.25
NO Delivery			
Weekend			
CUSTOMEER USE ONLY			
METHOD OF PAYMENT:			
Express Mail Account No. <b>607-621-1573</b>			
FROM: (PLEASE PRINT)		TO: (PLEASE PRINT)	
PHONE: <b>607-621-1573</b>		PHONE: _____	
Assistant Commissioner for Patents Box 10000 Washington, D.C. 20231			
A.C. GOTO MITSUBISHI ELECTRIC RESEARCH LABORATORY 201 BROADWAY FL 8 CAMBRIDGE MA 02134-1905			

PRE  
You

ATTN: MH-3291

FOR PICKUP OR TRACKING CALL 1-800-222-1811 [www.usps.com](http://www.usps.com)